

# The Joint Center for Satellite Data Assimilation Overview

Sid Boukabara  
[Sid.boukabara@noaa.gov](mailto:Sid.boukabara@noaa.gov)

## Abstract

The Joint Center for Satellite Data Assimilation (JCSDA), through an inter-agency partnership between NOAA NESDIS, NOAA NCEP, NASA, and the U.S. Department of Defense, supports the advancement of data assimilation of current and future satellite observations. Its mission is to accelerate and improve the quantitative and qualitative use of research and operational satellite data in weather, ocean, climate and environmental analysis and prediction models with a short-term focus on contributing to making the forecast skill of the operational NWP systems of the JCSDA partners internationally competitive by assimilating the largest possible number of satellite observations in the most effective way. Within JCSDA's support to facilitate operations to research (O2R) and research to operations (R2O) of state-of-the-art data assimilation techniques, is its core mission to accelerate and improve the use of satellite data and assess the impact of satellite observing systems on both global and increasingly, on regional NWP forecasts. Here, we present recent efforts supported by the JCSDA to advance and increase satellite observations assimilated within the GSI analysis system used to initialize both the Global Forecast System (GFS) model and regional Hurricane WRF (HWRF) model at NOAA NCEP. Examples include the assimilation of the SNPP ATMS data, the data impact experiments showing the relative impact of the satellite data and the conventional and airborne data, as well as the impact of assimilating scatterometer data into the assimilation system to improve both global and hurricane forecasts. Other externally-funded efforts will also be highlighted including fundamental improvements related to the atmospheric spectroscopy upgrade (necessary for any radiative transfer model used in NWP systems) as well as the surface emissivity upgrade.